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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,611	12/08/2003	Gary Sewell	278-0002US	4014

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EXAMINER	
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ART UNIT	PAPER NUMBER
3745	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,611	SEWELL, GARY	
	Examiner	Art Unit	
	Christopher Verdier	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) *3 and 31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-30 and 32-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12-8-03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restrictions

Applicant's election of species I in the reply filed on March 22, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-2, 4-30, and 32-34 read on species I. Note that claim 3 does not read on species I, because it is directed towards the separate embodiment (figure 3) of the adjustable iris, which pertains to species II as set forth in the previous Office action.

Claims 3 and 31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** a proper traverse in the reply filed on March 22, 2006.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first plurality of fixed sized openings comprising holes having a substantially non-circular cross section (claim 7), the blades having an aerofoil-shaped cross section (claim 18), the porous mesh coupled to a side of the side wall opposite the top plate and extending across the device in a plane substantially parallel to the top plate (claim 21), the automobile (claim 30), all limitations in claim 32, line 8 to the end of the claim (a second top plate ... second plurality of blades"), the first and second plate comprising the same plate (claim 33), and the first and second rotating means comprising a single motor

(claim 34) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Appropriate correction is required.

In paragraph 17, line 7, "plat" should be changed to -- plate --.

In paragraph 20, line 11, "230" (second occurrence) should be changed to -- 235 --.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 2, which recites that the top plate comprises a surface having a substantially circular cross section, has no antecedent basis in the specification.

Claim 6, which recites that the first plurality of fixed sized openings comprises holes having a substantially circular cross section, has no antecedent basis in the specification.

Claim 7, which recites that the first plurality of fixed sized openings comprises holes having a substantially non-circular cross section, has no antecedent basis in the specification.

Claim 9, which recites that the first and second plurality of fixed sized openings have substantially the same cross sectional shape, has no antecedent basis in the specification.

Claim 10, line 2, which recites gear teeth on at least a portion of an outer edge of the lower plate, has no antecedent basis in the specification.

Claim 11, which recites that the side wall is coupled at an approximately ninety degree angle relative to a top surface of the top plate, has no antecedent basis in the specification.

Claim 12, which recites that the partially enclosed volume comprises a substantially circular cross-section, has no antecedent basis in the specification.

Claim 13, which recites that the blades are adapted to sweep out substantially all of the partially enclosed volume when in a first position, has no antecedent basis in the specification.

Claim 15, which recites that the pitch adjustment means adjusts the pitch between approximately plus and minus 90 degrees, relative to the vertical position, has no antecedent basis in the specification.

Claim 26, which recites that at least one of the top plate and side wall comprise a metal, has no antecedent basis in the specification.

Claim 27, which recites that at least one of the top plate and side wall comprise a composite, has no antecedent basis in the specification.

Claim 28, which recites that at least one of the top plate and side wall comprise a plastic, has no antecedent basis in the specification.

Claim 30, which recites the vehicle comprising an automobile, has no antecedent basis in the specification.

Claim 32, lines 8-15 have no antecedent basis in the specification.

Claim 33, which recites that the first and second plate comprise the same plate, has no antecedent basis in the specification.

Claim 34, which recites that the first and second rotating means comprises a single motor, has no antecedent basis in the specification.

Claim Objections

Applicant is advised that should claim 24 be found allowable, claim 25 (the portion reciting that the rotating means is an electric motor) will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording,

it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4, line 2 recites "a first plurality of fixed openings in the top plate". This is contrary and ambiguous, because claim 1, from which claim 4 depends, recites in line 2 that the top plate comprises adjustable fluid passages. It is unclear how the openings can be fixed in claim 4 if they are stated to be adjustable in claim 1, line 2. Claim 4, lines 6-7, claim 5, line 3, claim 6, line 1, claim 7, line 1, claim 8, line 1, and claim 9, line 1 are contrary and ambiguous for the same reason.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 11-13, 18-20, and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett 3,892,287 in view of Illingworth 6,595,753. Bennett (figures 2-3) discloses a multi-mode forced vortex device substantially as claimed, including a top plate 30 comprising adjustable fluid passages near 64, a side wall 50 coupled to the top plate to create a partially enclosed volume, a plurality of blades 48, and a rotating means 44 for rotating the plurality of blades. The side wall is coupled at approximately a 90 degree angle relative to a top surface of the top plate. A skirt 23 is coupled to the sidewall (via top plate 30) and extends below the sidewall. The fluid passages are plural adjustable size openings in the top plate. The rotating means changes the speed of rotation of the blades (from zero to a rotation value). The device is in the form of a vehicle.

However, Bennett does not disclose that the plural blades are adapted to rotate within the partially enclosed volume (claims 1 and 29), does not disclose pitch adjustment means for adjusting the pitch of at least one of the blades (claims 1 and 29), does not disclose that the top plate comprises a surface with a substantially circular cross section (claim 2), does not disclose that the partially enclosed volume comprises a substantially circular cross section (claim 12), does not disclose that the blades are adapted to sweep out substantially all of the partially enclosed volume when in a first position (claim 13), does not disclose that the blades comprise an airfoil cross section (claim 18), does not disclose that the blades comprise a substantially rectangular shape (claim 19), does not disclose that the rotation means comprises an electric motor (claim 24), does not disclose that the rotating means comprises an electric motor or an internal combustion engine (claim 25), does not disclose that at least one of the top plate and side

wall comprise a metal (claim 26), does not disclose that at least one of the top plate and side wall comprise a composite (claim 27), does not disclose that at least one of the top plate and side wall comprise a plastic (claim 28), and does not disclose that the vortex device comprises an automobile (claim 30).

Illingworth (figures 15, 16A and 16B) shows a vortex device shown generally at 35, whereby plural blades 34 are provided, with the plural blades being adapted to rotate within a partially enclosed volume formed by a top plate and a side wall coupled to the top plate to create a partially enclosed volume, for the purpose of providing a strong vortex capable of attaching itself to an object. The blades may be variable pitch (column 23, lines 18-21), for the purpose of controlling fluid flow for controlled attraction. As seen in figures 15, 16A and 16B, the top plate (near 35) comprises a surface with a substantially circular cross section, and the partially enclosed volume comprises a substantially circular cross section, with the blades being adapted to sweep out substantially all of the partially enclosed volume when in a first position, for the purpose of forming an enclosure around the blades, reducing working fluid leakage. The blades may comprise an airfoil cross section (column 23, lines 16-17), for the purpose of minimizing fluid resistance and maximizing fluid movement. The blades may comprise a substantially rectangular shape (column 23, lines 11-12), for the purpose of providing for simplicity of the blades. Rotation means 30 may be an electric motor or an internal combustion engine (column 4, lines 40-42), for the purpose of providing a readily compact source of power for driving the blades. The top plate and side wall may comprise a metal, a composite, or a plastic (column 10, lines 36-39), for the purpose of reducing weight. The vortex device may be in the form of an

automobile (column 9, lines 14-15), for the purpose of providing for vortex attraction in a moving vehicle.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the vortex device of Bennett such that the plural blades are adapted to rotate within the partially enclosed volume, such that it includes pitch adjustment means for adjusting the pitch of at least one of the blades, such that the top plate comprises a surface with a substantially circular cross section, such that the partially enclosed volume comprises a substantially circular cross section, such that the blades are adapted to sweep out substantially all of the partially enclosed volume when in a first position, such that the blades comprise an airfoil cross section, such that the blades comprise a substantially rectangular shape, such that the rotating means comprises an electric motor or an internal combustion engine, such that at least one of the top plate and side wall comprise a metal, composite, or a plastic, and such that the vortex device comprises an automobile, as taught by Illingworth.

Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett 3,892,287 in view of Illingworth 6,595,753 as applied to claim 1 above. The modified device of Bennett shows all of the claimed subject matter except for the pitch adjustment means being adapted to adjust the pitch of the at least one blade through approximately 360 degrees (claim 14), except for the pitch adjustment means being adapted to adjust the pitch of the at least one blade through between approximately plus and minus ninety degrees relative to a vertical position (claim 15), except for each of the plurality of blades being coupled to a separate pitch

adjustment means (claim 16), and except for each of the plurality of pitch adjustment means adjusting the pitch of a blade independently of the action of any other one of the pitch adjustment means (claim 17).

Official Notice is taken that impellers for aeronautic devices have pitch adjustment means for adjustable pitch blades which are conventionally formed such that the pitch adjustment means is adapted to adjust the pitch of blades through approximately 360 degrees, through between approximately plus and minus ninety degrees relative to a vertical position, with plural blades each coupled to a separate pitch adjustment means, and with the plurality of pitch adjustment means adjusting the pitch of a blade independently of the action of any other one of the pitch adjustment means, for the purpose of providing accurate control of the aeronautic device.

It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified vortex device of Bennett such that the pitch adjustment means is adapted to adjust the pitch of the at least one blade through approximately 360 degrees, is adapted to adjust the pitch of the at least one blade through between approximately plus and minus ninety degrees relative to a vertical position, such that each of the plurality of blades is coupled to a separate pitch adjustment means, and such that each of the plurality of pitch adjustment means adjusts the pitch of a blade independently of the action of any other one of the pitch adjustment means, for the purpose of providing accurate control of the aeronautic device.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett 3,892,287 and Illingworth 6,595,753 as applied to claim 1 above, and further in view of Shaw 3,203,645. The modified device of Bennett shows all of the claimed subject matter except for a porous mesh coupled to a side of the side wall opposite the top plate and extending across the device in a plane substantially parallel to the top plate.

Shaw (figure 3) shows a jet reaction airborne vehicle with an impeller arrangement 11 having a porous mesh 23 coupled to a side of an unnumbered side wall opposite an unnumbered top plate and extending across the vehicle in a plane substantially parallel to the top plate, for the purpose of protecting the impeller from debris.

It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified vortex device of Bennett such that it includes a porous mesh coupled to a side of the side wall opposite the top plate and extending across the device in a plane substantially parallel to the top plate, as taught by Shaw.

Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett 3,892,287 in view of Illingworth 6,595,753 and Crowley 3,208,543. Bennett (figures 2-3) discloses an apparatus substantially as claimed, including a first top plate 30 comprising adjustable fluid passages near 64, a first side wall 50 coupled to the first top plate to create a first

partially enclosed volume, a first plurality of blades 48, and a first rotating means 44 for rotating the first plurality of blades.

However, Bennett does not disclose that the first plurality of blades are adapted to rotate within the partially enclosed volume (claim 32), does not disclose a first pitch adjustment means for adjusting the pitch of at least one of the first plurality of blades (claim 32), does not disclose a second top plate comprising a second set of adjustable fluid passages, with a second side wall coupled to the second top plate to create a second partially enclosed volume, with a second plurality of blades adapted to rotate within the second partially enclosed volume, with a second pitch adjustment means for adjusting the pitch of at least one of the second plurality of blades, with a second rotating means for rotating the second plurality of blades (claim 32), does not disclose that the first plate and second plate comprise the same plate (claim 33), and does not disclose that the first rotating means and the second rotating means comprises a single motor (claim 34).

Illingworth (figures 15, 16A and 16B) shows a vortex device shown generally at 35, whereby plural blades 34 are provided, with the plural blades being adapted to rotate within a partially enclosed volume formed by a top plate and a side wall coupled to the top plate to create a partially enclosed volume, for the purpose of providing a strong vortex capable of attaching itself to an object. The blades may be variable pitch (column 23, lines 18-21), for the purpose of controlling fluid flow for controlled attraction.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the apparatus of Bennett such that the plural blades are adapted to rotate within the partially enclosed volume, and such that it includes pitch adjustment means for adjusting the pitch of at least one of the blades, as taught by Illingworth.

Crowley (figures 8-9) shows a power plant arrangement for a ground effect vehicle, whereby first and second pluralities of blades 96, 104 are provided, for the purpose of providing a greater air cushion by virtue of the first and second pluralities of blades. Each of the first and second pluralities of blades are driven by a first rotating means and the second rotating means comprising a single motor 106, for the purpose of reducing the number of driving means required to drive the first and second pluralities of blades.

It would have been further obvious at the time the invention was made to a person having ordinary skill in the art to form the modified apparatus of Bennett such that it has a duplicate second plurality of blades such that it includes a second top plate comprising a second set of adjustable fluid passages, with a second side wall coupled to the second top plate to create a second partially enclosed volume, with the second plurality of blades adapted to rotate within the second partially enclosed volume, with a second pitch adjustment means for adjusting the pitch of at least one of the second plurality of blades, with a second rotating means for rotating the second plurality of blades (claim 32), with the first plate and second plate comprising the same plate, and such that the first rotating means and the second rotating means comprises a single motor, as taught by Crowley.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Colley is cited to show a ground effect aircraft with plural impellers driven by two coupled engines.

Beardsley is cited to show an air cushion vehicle that is adapted to be an automobile.

Hall is cited to show an air cushion vehicle with louvers.

Schmidt is cited to show a ground effect vehicle with dual impellers.

Lissaman is cited to show a hover vehicle with adjustable pitch rotor blades.

McGill is cited to show a ground effect machine made of metal or composite.

Allowable Subject Matter

Claims 4-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (571) 272-4824. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C.V.
May 28, 2006

Christopher Verdier
Primary Examiner
Art Unit 3745